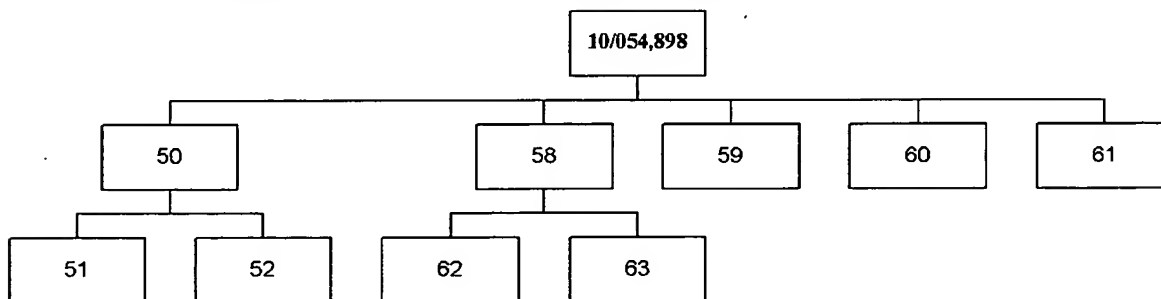


AMENDMENT UNDER 37 C.F.R. § 1.116
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REMARKS

Claims 50-52 and 57-63 are now all the claims pending in the application. New claims 62 and 63 have been added. Claim 60 has been allowed. The claims are arranged as follows:



The Examiner rejected claims 50-52, 59, and 61 under 35 U.S.C. §102(b) as being anticipated by Barinaga, and claim 58 as being anticipated by Mitchell.

Independent claim 50

Applicant respectfully requests the Examiner to reconsider the rejection of claim 50. In particular, Applicant respectfully submits Barinaga does not teach or suggest the requirement of claim 50 for "said protruding member contacting the ink supply needle of the printing apparatus". As shown in Barinaga's Figs. 9 and 10, Barinaga simply teaches that, during the coupling of an ink supply 20 into a docking bay 38 of an ink jet printer, a needle 162 pierces a septum 104 to enter the housing and presses a sealing ball 102 away from the septum. There is no part of the Barinaga cartridge that can be read as a protruding member and also as contacting the ink supply needle.

On the other hand, in a cartridge according to claim 50, the above-mentioned claimed feature is present. The protruding member contacts the needle when the needle is inserted to open the ink channel or is pulled out to close the ink channel. Because of the contact, an ink supply system can be more efficiently attached or detached while ensuring the ink sealing.

Since Barinaga does not meet the above-identified requirement of claim 50, Barinaga cannot reasonably be said to anticipate claim 50 within the meaning of 35 U.S.C. § 102(b).

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Therefore, Applicant respectfully requests the Examiner to withdraw this rejection of independent claim 50 and its dependent claims 51 and 52.

Independent claim 58

The Examiner rejected claim 58 under 35 U.S.C. §102(b) as being anticipated by Mitchell. Claim 58, as now amended, is respectfully submitted to patentably distinguish over Mitchell. In particular, Mitchell does not teach or suggest that the notch has an angle defined in conjunction with the tapered angle of the ink supply needle.

As shown in Mitchell's Fig. 6, a conical inlet 61 is merely disposed for helping a needle 39 steer into a previously pre-punctured hole 60. Thus, Mitchell is silent with respect to relations between the conical inlet and an angle of the needle.

Claim 58, as amended, now defines a cartridge with a feature that prevents a tip end of the ink supply needle from being damaged under the pressure generated from the abutment of the needle against a second member of the ink supply system. The Mitchell reference is silent as to the required angle and likewise silent as to any recognition of such problems with needle pressure. Applicant therefore respectfully submits that claim 58 now patentably distinguishes over Mitchell.

Independent claim 59.

The Examiner rejected claim 59 under 35 U.S.C. §102(b) as being anticipated by Barinaga. Claim 59 has been amended to require that the guide body operably suppress a horizontal deviation of the second member.

Barinaga does not teach or suggest such a feature. As shown in Barinaga's Figs. 9 and 10, a sealing ball 102 is merely disposed for closing or opening an ink channel in conjunction of a needle 162. Thus, the language of the claim cannot be read on the body of the ball.

Because the claim includes the above-identified requirement, a more efficient ink-sealing on the ink supply system is achieved. When a second member is urged by an ink supply needle for opening an ink channel, the second member is properly guided to slide substantially vertically with respect to a first member provided in the ink channel. Then, when the second

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member is released from being urged for closing the ink channel, the second member is properly abutted back against the first member. Thus, even if the claimed ink supply system is repeatedly attached to and detached from a print head of a printing apparatus, ink sealing can be effectively secured even when the cartridge is not in a normal use.

Since Barinaga does not meet the requirement of claim 59 that the guide body operably suppress a horizontal deviation of the second member, Barinaga cannot be said to anticipate claim 59 within the meaning of 35 U.S.C. § 102. Applicant therefore respectfully requests the Examiner to withdraw this rejection of claim 59.

Independent claim 61.

The Examiner rejected claim 61 as being anticipated by Barinaga. Claim 61 has been amended to include a requirement that the ink channel extends substantially straight to an interior of the ink chamber from the ink supply port. Applicant respectfully submits that claim 61, as now amended, patentably distinguishes over Barinaga.

Barinaga fails to teach or suggest the above-identified requirement of claim 61.. As shown in Figures 9 and 10 of the reference, Barinaga teaches an ink channel that is not substantially straight from the ink supply port to the interior of the ink chamber. In particular, the Barinaga ink channel is connecting from a fluid inlet 42 into to an ink reservoir 24 (via a boss 99, a conduit 84, a pump outlet 62, a chamber 56, a flapper vale 64 and a pump inlet 60). In such configuration, a pump operation as shown in Figures 12A to E must be used to control pressure for allowing ink flowing along the ink channel.

However, because a cartridge according to claim 61 has the above-identified feature of an ink channel that extends substantially straight to an inter of the ink chamber from the ink supply port, it can supply ink more simply, along the ink channel, to a printing head or printing apparatus without the complicated pressure control necessary in the Barinaga approach.

Since Barinaga does not meet the above-identified requirement of claim 61, Applicant respectfully requests the Examiner to find that Barinaga does not anticipate the claim. Applicant therefore respectfully requests the Examiner to withdraw this rejection of claim 61.

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New claims 62 and 63.

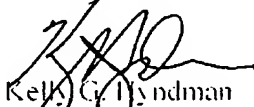
New claims 62 and 63 are patentable in view of their dependence from claim 58.

Conclusion and request for telephone interview.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,


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Date: November 5, 2002

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APPENDIX

Version With Markings To Show Changes Made

IN THE CLAIMS:

The claims are amended as follows:

58. (Amended) An ink supply system for a printing apparatus providing ink to a printing head through a tapered ink supply needle, said ink supply system capable of providing ink contained in an ink chamber to the print head through the ink supply needle, comprising:

an ink channel for providing ink from said ink chamber to the print head of the printing apparatus;

a first member provided at said ink channel, forming a part of said ink channel for allowing a flow of ink, said first member sealing the ink supply needle of the ink printing apparatus by fitting therewith; and

a second member contained in said ink channel elastically abutting against said first member in a direction which is the same as a direction of the sealing by said first member with said second member, said second member selectively opening and closing said ink channel in conjunction with the ink supply needle;

wherein said second member comprises a surface, facing said packing member, provided with a notch, said notch having an angle defined in conjunction with the tapered angle of the ink supply needle.

59. (Amended) An ink supply system for a printing apparatus providing ink to a printing head through a tapered ink supply needle, said ink supply system capable of providing ink contained in an ink chamber to the print head through the ink supply needle, comprising:

an ink channel for providing ink from said ink chamber to the print head of the printing apparatus;

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a first member provided at said ink channel, forming a part of said ink channel for allowing a flow of ink, said first member sealing the ink supply needle of the ink printing apparatus by fitting therewith; and

a second member contained in said ink channel elastically abutting against said first member in a direction which is the same as a direction of the sealing by said first member with said second member, said second member selectively opening and closing said ink channel in conjunction with the ink supply needle;

wherein said second member comprises a guide body operably allowing said second member to slide substantially vertically with respect to said packing member, said guide body operably suppressing a horizontal deviation of said second member.

61. (Amended) An ink supply system for a printing apparatus providing ink to a printing head through a tapered ink supply needle, said ink supply system capable of providing ink contained in an ink chamber along an ink supply port to the print head through the ink supply needle, comprising:

an ink channel for providing ink from said ink chamber to the print head of the printing apparatus, said ink channel extending substantially straight to an interior of said ink chamber from said ink supply port;

a first member provided at said ink channel, forming a part of said ink channel for allowing a flow of ink, said first member sealing the ink supply needle of the ink printing apparatus by fitting therewith; and

a second member contained in said ink channel elastically abutting against said first member in a direction which is the same as a direction of the sealing by said first member with said second member, said second member selectively opening and closing said ink channel in conjunction with the ink supply needle;

wherein a direction of said ink channel is substantially the same direction as the direction of the sealing of said first member with said second member.

Claims 62 and 63 are added as new claims.

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